

WE CLAIM:

1. An antenna, comprising:

a ground plane having an upper surface and an opposing lower surface;

5 a plurality of dipoles extending outwardly from the upper surface,

a set of feedlines disposed proximate the upper surface and coupled to the dipoles;

10 a set of striplines disposed upon the lower surface and coupled through the ground plane to the set of feedlines; and

at least one sliding dielectric member adjustably disposed proximate a portion of the set of striplines and adapted to shift a phase velocity of a signal
15 communicating therepast to the dipoles.

2. The antenna as specified in Claim 1 wherein the dipoles are configured in sets, each of the dipole sets having a single respective feedline coupled thereto.

20 3. The antenna as specified in Claim 1 wherein the set of striplines have a plurality of serpentine portions each having a respective said dielectric member slidably disposed thereupon.

4. The antenna as specified in Claim 2 wherein the dipoles are configured in pairs of orthogonal dipoles and the first set of feedlines comprise a divider.

5. The antenna as specified in Claim 1 further
5 comprising an electrically non-conductive member disposed between the ground plane and the second set of striplines.

6. The antenna as specified in Claim 5 wherein the set of striplines are disposed on the electrically
10 non-conductive member.

7. The antenna as specified in Claim 6 wherein the set of feedlines are spaced above the ground plane and separated therefrom by an air dielectric.

8. The antenna as specified in Claim 5 further
15 comprising a second ground plane disposed on the electrically non-conductive member and opposing the set of striplines.

9. The antenna as specified in Claim 1 further comprising at least one cable extending across said
20 lower surface and coupled to the set of striplines.

10. An antenna array comprised of a plurality of antennas, each antenna comprising:

a ground plane having an upper surface and an opposing lower surface;

5 a plurality of dipoles extending outwardly from the upper surface,

a set of feedlines disposed proximate the upper surface and coupled to the dipoles;

10 a set of striplines disposed upon the lower surface and coupled through the ground plane to the set of feedlines; and

at least one sliding dielectric member adjustably disposed proximate a portion of the set of striplines and adapted to shift a phase velocity of a signal
15 communicating therepast to the dipoles.

11. The antenna array as specified in Claim 10 wherein each said antenna is coupled to another adjacent said antenna such that the dipoles of each antenna extend outwardly, and the respective ground
20 planes of each antenna generally face inwardly towards one another.

12. The antenna array as specified in Claim 11 wherein the coupled antennas collectively form a multi-sector antenna array extending 360°.

13. The antenna array as specified in Claim 12
5 comprising 3 of the antennas, each of the antennas covering generally a 120° sector.

14. The antenna array as specified in Claim 10 further comprising a plurality of adjustment members, one said adjustment member being coupled to each of
10 the sliding dielectric members of each of the antennas, the adjustment members adapted to adjust a beamtilt of the respective antenna.

15. The antenna array as specified in Claim 10 wherein each of the ground planes have bent edges
15 adapted to control a lateral beam lobe of the respective antenna.

16. The antenna array as specified in Claim 15 wherein the ground plane edges each have at least 2 bends.

20 17. The antenna array as specified in Claim 15 wherein the antennas are physically coupled to one another along their respective bent edges, but are electrically isolated from one another by an electrically non-conductive member.

18. The antenna array as specified in Claim 10 wherein the dipoles are configured in sets, each of the dipole sets having a single respective feedline coupled thereto.
- 5 19. The antenna array as specified in Claim 10 wherein the set of striplines have a plurality of serpentine portions each having a respective said dielectric member slidably disposed thereupon.
- 10 20. The antenna array as specified in Claim 2 wherein the dipoles are configured in pairs of orthogonal dipoles and the first set of feedlines comprise a divider.
- 15 21. The antenna array as specified in Claim 20 further comprising an electrically non-conductive member disposed between the ground plane and the set of striplines.
22. The antenna array as specified in Claim 10 wherein the set of striplines are disposed on the electrically non-conductive member.
- 20 23. The antenna array as specified in Claim 22 wherein the set of feedlines are spaced above the ground plane and separated therefrom by an air dielectric.

24. The antenna array as specified in Claim 23 further comprising a second ground plane disposed on the electrically non-conductive member and opposing the set of striplines.

5 25. The antenna as specified in Claim 10 further comprising at least one cable extending across said lower surface and coupled to the set of striplines.

26. The antenna as specified in Claim 10 further comprising a radome encompassing the antenna, the
10 radome including at least one metal portion thereon.

27. The antenna as specified in Claim 26 wherein the metal portion is a electrically conductive paint.

28. The antenna as specified in Claim 10 wherein the antenna array is configured as an omnidirectional
15 antenna.